

3COM® MSR 20-1X SERIES MULTI-SERVICE ROUTERS

Economical, full-featured multi-service routers designed for converged WAN, wired and wireless LAN traffic at enterprise branch locations and small- to medium-sized businesses



top: 3Com MSR 20-12 W, 3Com MSR 20-11
foreground: 3Com MSR 20-13, 3Com MSR 20-15 A

OVERVIEW

The network is a critical component of a successful business, helping organizations expand into new markets, collaborate with customers, partners and employees and efficiently manage communications. It is imperative that the network enable these processes and communications reliably and cost effectively, while providing protection from potentially disruptive, expensive and reputation-damaging security breaches.

With fixed WAN connectivity and available modules for expansion, 3Com® MSR 20-1X Series Multi-Service Routers deliver high performance and value by satisfying customer business requirements while reducing complexity, simplifying management and increasing control, providing lasting investment protection and reducing capital and operating expenses.

3Com Multi-Service Routers enable an agile and flexible network infrastructure, with the ability to quickly adapt to changing business requirements, while delivering integrated, concurrent services on a single, easy-to-manage platform.

The MSR 20-1X Series consists of four modular platforms—MSR 20-11, 20-12, 20-13 and 20-15—delivering:

- › a scalable, single-unit WAN, wired and wireless LAN, voice, firewall, and VPN gateway;
- › web-based management and other tools which facilitate system deployment and operation
- › on-board WAN and LAN ports for flexibility
- › unparalleled secure, converged networking through the use of embedded and integrated hardware-based encryption and voice processing capabilities; and,
- › flexible platform with interface and module options for LAN, WAN and voice communications.

KEY BENEFITS

CONVERGED COMMUNICATIONS SUPPORT

In addition to a comprehensive portfolio of converged gateway interfaces, the MSR 20-1X Series delivers services up to wirespeed T1/E1 rates. All MSR 20-1X routers also provide FXS/FXO voice access. The MSR 20-12/15 even offers optional embedded Voice Processing Modules (VPM), which enable advanced voice processing for digital voice services (E1/T1 voice) without compromising performance of the other modules or of the router.

KEY BENEFITS (CONTINUED)

The VPM serves as a Digital Signal Processor (DSP) to support IP voice communication over the network. Scalable voice configurations and higher line density are supported through the use of multiple VPMs, based on the number of voice lines required. VPMs reside on a centralized, embedded multi-service processor module, conserving router I/O slots for maximum port density and configuration flexibility. Fully-populated, the MSR 20-12/15 can accommodate as many as 32 digital voice channels.

Building on 3Com's commitment to open standards, the MSR 20-1X Series supports common industry voice protocols including Session Initiation Protocol (SIP) and H.323.

ADVANCED SECURITY AND CONTROL

To help protect sensitive information against unauthorized access, the MSR 20-1X Series integrates a number of comprehensive security services and access management capabilities, including:

- › Hardware-based encryption acceleration capabilities that ensure security without compromising network throughput as performance needs increase;
- › Progressive encryption methods such as DES, 3DES and AES 256;
- › Additional security features such as advanced firewall, L2TP, SSL, IPsec and MPLS VPNs. SSHv2 and SNMPv3 protect router management sessions.

INTEGRATED AND FLEXIBLE SERVICES ARCHITECTURE

The MSR 20-1X Series supports flexible configurations, which deliver integrated, concurrent services on a single platform, creating operational efficiencies, reducing costs and maximizing valuable rack space and power.

With a comprehensive set of integrated modules that deliver voice and data interfaces, routing and switching capabilities, the MSR 20-1X has the capacity to deliver the functionality of multiple devices and appliances in a single platform.

INTEGRATED WIRELESS LAN CAPACITY

MSR 20-1X Series routers are available with IEEE 802.11b/g wireless access integrated into a single platform, reducing overall hardware investment. The web-based management tool expedites configuring and deploying wireless connectivity.

HIGH DENSITY ROUTING AND SWITCHING PERFORMANCE

When evaluating multi-service routers, performance, port density and configuration flexibility are all key considerations. The MSR 20 Series outperforms competing multi-service routers, delivering packet forwarding performance up to 160 Kpps and encryption performance of up to 30 Mbps.

With fixed WAN ports and available interface and module options for LAN and voice, the MSR 20-1X Series delivers concurrent services up to T1/E1 rates, in addition to Fast Ethernet LAN connectivity. Smart Interface Card (SIC) options include high-density Layer 2 10/100 Mbps Ethernet switching cards for integrated switching and routing in a single platform, simplifying infrastructure deployments for branch and regional offices.

RESILIENCE AND REDUNDANCY FOR MAXIMUM UPTIME

The MSR 20-1X Series is designed for the highest levels of availability and resiliency to ensure continuous operation and to meet the requirements of real-time applications such as VoIP and live and on-demand video. All MSR 20-1X models support one FE WAN uplink and SA/E1/T1/DSL, while ISDN BRI or analog modem serves as a backup link on 20-13 and 20-15 models.

Additional reliability capabilities include configuration rollback, Multilink PPP and Multilink Frame Relay and VRRP.

NEXT-GENERATION ROUTING CAPABILITIES

The evolution to next generation networks based on IPv6 is imminent; however, organizations worldwide will follow different paths as they transition from today's IPv4 networks. The MSR 20-1X Series offers comprehensive IPv4 and IPv6 routing capabilities to accommodate a variety of migration approaches such as IPv4 "islands" on IPv6 networks, IPv6 "islands" on IPv4 networks and interconnection (with protocol translation) of IPv6 and IPv4 networks, enabling a wide array of network design possibilities.

Through a powerful suite of MPLS features, including MPLS TE (Traffic Engineering) and Fast Re-Route (FRR), the MSR 20-1X Series maximizes the benefit of a MPLS backbone to provide bandwidth optimization, strict QoS guarantees for the transport of critical traffic and the ability to quickly re-route traffic following network failures.

KEY BENEFITS (CONTINUED)

FULLY FEATURED ROUTING PLATFORM

Unlike competitive offerings, the MSR 20-1X Series comes equipped with a complete routing and security suite, a robust application set and all required operating memory, eliminating the need for costly and inconvenient upgrades. Specifically, the MSR 20-1X Series includes:

- › Open, industry standards-based routing capabilities such as: IP and IPX routing; Open Shortest Path First (OSPF); RIP versions 1, 2 and 3, BGP; integrated intermediate system to intermediate system (IS-IS); multicast routing; QoS; IEEE 802.1Q VLANs; and IGMP versions 1, 2 and 3; and,
- › Built-in flash and USB slots that hold multiple configuration files and operating systems for recovery purposes.

SOPHISTICATED MANAGEMENT

Network infrastructure deployments and upgrades can be costly and time-consuming for organizations with several branch offices or remote locations.

The MSR 20-1x Series offers an intuitive, easy-to-use web management tool to help the users quickly configure and deploy.

The MSR 20-1X also support CLI function that can be securely accessed locally or remotely for comprehensive configuration and management, with additional features that provide an extensive set of management capabilities.

For example, the MSR 20-1X Series is compatible with industry-standard NetFlow, an efficient and powerful technique for collecting IP traffic information, including information about network users and applications, peak usage times and traffic volumes.

The MSR 20-1X Series is also fully manageable via the 3Com Enterprise Management Suite (EMS) or 3Com Intelligent Management Center (IMC), which provide powerful graphical applications with advanced remote diagnostics and network management capabilities.

FEATURE HIGHLIGHTS

- › Integrated routing and switching, and remote management capabilities simplify managed services for remote locations and branch offices.
- › FXS/FXO for all MSR 20-1X, optional E1/T1 digital voice processing capabilities (MSR 20-12/15 only).
- › Advanced Multi-Service Architecture delivers enhanced, integrated data, voice and security services.
- › Embedded voice processing functionality delivers advanced, high-performance analog and digital voice capabilities for connections to centralized IP PBX and local public switched telephone network (PSTN).
- › Versatile modular chassis supports WAN, LAN, wireless and voice interfaces. Backward compatibility with existing SIC interfaces enhances investment protection and provides maximum configuration flexibility.
- › Advanced, embedded security functions with hardware-based encryption accelerator ensuring the highest levels of security without sacrificing throughput performance.
- › Standards-based design ensures complete interoperability in multi-vendor environments, including Cisco.
- › Enhanced performance, security and reliability make the MSR 20-1X Series an affordable platform for delivering converged networks, including data, voice and video.
- › Comprehensive IPv6 and IPv4 routing functionality ensures seamless migration.
- › Engineered by H3C, a 3Com company.



3Com MSR 20-12W Multi-Service Router

SPECIFICATIONS

All information in this section is relevant to the MSR 20-11, 20-12, 20-13 and 20-15 unless stated otherwise.

SIC = Smart Interface Controller

DSIC = Double-width Smart Interface Controller

SLOT AND PORT CAPACITY

MSR 20-11

SIC slots: 1 single-width or 1 double-width

1 10/100 Ethernet WAN port

4 10/100 Ethernet LAN ports

1 Synchronous/Asynchronous port

1 console/auxiliary combo port

1 USB 1.1 port

MSR 20-12

SIC slots: 1 single-width or 1 double-width

1 10/100 Ethernet WAN port

4 10/100 Ethernet LAN ports

1 E1 (MSR 20-12) or T1 (MSR 20-12 T) port

1 console/auxiliary combo port

1 USB 1.1 port

IEEE 802.11b/g (MSR 20-12 W)

MSR 20-13

SIC slots: 1 single-width or 1 double-width

1 10/100 Ethernet WAN port

4 10/100 Ethernet LAN ports

1 4-wire G.SHDSL port

1 ISDN BRI S/T backup port

1 console/auxiliary combo port

1 USB 1.1 port

IEEE 802.11b/g (MSR 20-13 W)

MSR 20-15

SIC slots: 1 single-width or 1 double-width

1 10/100 Ethernet WAN port

4 10/100 Ethernet LAN ports

1 ADSL2+ over POTS port

1 ISDN BRI S/T (MSR 20-15 I) or 1 V.92 analog modem (MSR 20-15 A) backup port

1 console/auxiliary combo port

1 USB 1.1 port

IEEE 802.11b/g (MSR 20-15 I W, MSR 20-15 A W)

PROCESSORS

RISC 333MHz processing module

8/16/24/32 voice channels

SYSTEM MEMORY

256 Mb DDR SDRAM (default and max.)

32 Mb flash

POWER SUPPLY

AC Power

100 to 240 VAC, 50/60 Hz

25W maximum

PHYSICAL SPECIFICATIONS

Height: 44.2mm (1.7 in)

Width: 300mm (11.8 in)

Depth: 240mm (9.4 in)

Weight: 3 kg (6.6 lb)

Height does not include antennas on wireless models

Weight is with no optional modules installed

All models can be mounted in a standard 19-inch rack when used with the optional rack mount kit

ENVIRONMENTAL

Operating temperature: 0° to 40° C (32° to 104° F)

Storage temperature: -40° to 70° C (-40° to 158° F)

Humidity (operating and storage): 5% to 90% non-condensing

REGULATORY COMPLIANCE

CE (European Union)

UL (North America)

FCC (North America)

EMC STANDARDS

FCC Part 15 (CFR 47) Class A

ICES-003 Class A

VCCI Class A

CISPR 22 Class A

EN 55022 Class A

AS/NZS CISPR22 CLASS A

EN 55024

CISPR 24

IEC 61000-3-2, 61000-3-3

EN 61000-6-1

ETSI EN 300 386 V1.3.3

SAFETY AGENCY CERTIFICATIONS

UL 60950-1: 2003

CAN/CSA C22.2 No 60950-1-03

IEC 60950-1 2001

EN 60950-1/A11: 2004

AS/NZS 60950

EN 60825-1 and 60825-2

FDA 21 CFR Subchapter J

TELECOM STANDARDS

FCC Part 68 (CFR 47)

IC CS-03

MTBF

MSR 20-11: 45 years (397,000 hours)

MSR 20-12: 42 years (370,000 hours)

MSR 20-13: 42 years (370,000 hours)

MSR 20-15: 42 years (370,000 hours)

SPECIFICATIONS (CONTINUED)

NETWORK MANAGEMENT

Tools

Web-based management

CLI

3Com Intelligent Management Centre

3Com Enterprise Management Suite

3Com Network Director

3Com Router Manager

Embedded Management Features

SNMP v1, v2c, v3

Standard and enterprise MIBs

Telnet

SSH

Syslog

BIMS

RMON

Zero-touch deployment

Configuration rollback

NetStream packet statistics

LAN INTERFACE MODULES

LAN Modules (SIC/DSIC)

1-port 10/100 Ethernet

1-port 10/100/1000 Ethernet

4- and 9-port 10/100 Ethernet switching

WAN INTERFACE MODULES

WAN Modules (SIC/DSIC)

1-port enhanced serial sync/asyn

1- port ISDN-S/T

1- port ISDN-U

1-port E1/CE1/PRI

1-port T1/CT1/PRI

1-port ADSL 2+

1-port analog modem

VOICE MODULES

Voice Modules (SIC)

1- and 2-port voice FXS

1- and 2-port voice FXO

1-port E1 voice

1-port T1 voice

VOICE SUPPORT

Interface

FXS

FXO

E&M

E1VI/T1VI

Signaling

SIP

R2

DSSI

Q.sig

Digital E&M

H.323

H.225

H.245

CODECS

G.711A law

G.711U law

G.723R53

G.723R63

G.729a

G.729R8

Media Process

RTP/cRTP

IPHC

Voice backup

FAX

Fax

Other

Voice RADIUS

Voice over Frame Relay (VoFR)

LINK PROTOCOLS

LAN Protocols

Ethernet II

Ethernet SNAP

IEEE 802.3x VLAN

IEEE 802.1P

IEEE 802.1Q

IEEE 802.3ad LACP

IEEE 802.1w RSTP

IEEE 802.1s MSTP

IGMP snooping

GVRP

Port loopback

Port multicast suppression

WAN Protocols

PPP and Multilink PPP (MP)

PPPoE client and server

PPP/MP over FR

FR and Multilink FR (MFR)

Frame relay fragmentation, compression, and FR over IP

Frame Relay Traffic Shaping (FRTS)

ATM (IPoA, IPoEoA, PPPoA and PPPoEoA)

DCC and dialer watch

HDLC

LAPB

X25, X25 over TCP, X25 to TCP

X25 PAD, X25 hunt groups and X25 CUG

DLSW (V1.0/2.0)

ISDN and ISDN network

ISDN QSIG

MODEM

MPLS

LDP

LSPM

MPLS TE

RSVP TE

MPLS FW

L2 MPLS

L3 MPLS

SPECIFICATIONS (CONTINUED)

NETWORK PROTOCOLS

IP Service and Applications

TCP
UDP
ARP
IP option
IP unnumbered
Policy-based routing (unicast/multicast)
PING, traceroute
DHCP server, relay, and client
DNS client
DNS static
NQA
IP accounting
UDP helper
NTP
Telnet
TFTP client
FTP server, client

IP Routing

Static
RIP v1 and v2
OSPF
OSPF v3
BGP IV
IS-IS
IGMP
PIM-DM
PIM-SM
MBGP
MSDP

Non-IP

SNA/DLSw
IPX
SOT
QLLC
NetStream

QUALITY OF SERVICE (QOS)

Layer 2 QoS

SP
WRED (Port)
CAR
LR
Flow-based QoS policy
Port-based mirroring
Flow-based mirroring
CoS-based Head of Line Blocking (HOLB) prevention
Packet remarking
Flow redirect
Flow accounting
Priority mapping
Port trust mode
Port priority
Flow filter
Flow control and backpressure
ACL

Traffic Policing

Committed Access Rate (CAR)
Line Rate (LR)

Congestion Management

FIFO
PQ
CQ
WFQ
CBQ
RTPQ

Congestion Avoidance

WRED/RED

Traffic Shaping

Generic

Other

FR QoS
MPLS QoS
MP QoS/LFI
cRTP/IPHC
ATM QoS
Sub-interface QoS

NETWORK SECURITY AND RELIABILITY

Port-Based

PPPoE client and server
Portal
IEEE 802.1X

AAA

Local authentication
RADIUS
TACACS

Firewall

ASPF
Access Control Lists (ACL)
Filtering



3Com MSR 20-13 Multi-Service Router

SPECIFICATIONS (CONTINUED)

Data Security

IKE

IPSec

Encryption accelerator

Portal

Other

L2TP

NAT/NAPT

PKI

RSA

SSH v1.5 and v2

SSL

URPF

GRE

Reliability

VRRP

Backup Center

WARRANTY AND OTHER SERVICES

One-year Limited Hardware Warranty

Limited Software Warranty for 90 days

90 days of telephone technical support

Refer to www.3com.com/warranty for details.



3Com MSR 20-15 A W Multi-Service Router

ORDERING INFORMATION

PRODUCT DESCRIPTION	3COM SKU
3Com MSR 20-11 Multi-Service Router	0235A395
3Com MSR 20-12 Multi-Service Router	0235A396
3Com MSR 20-12 W Multi-Service Router	0235A397
3Com MSR 20-12 T Multi-Service Router	0235A398
3Com MSR 20-13 Multi-Service Router	0235A390
3Com MSR 20-13 W Multi-Service Router	0235A391
3Com MSR 20-15 I Multi-Service Router	0235A394
3Com MSR 20-15 I W Multi-Service Router	0235A38V
3Com MSR 20-15 A Multi-Service Router	0235A392
3Com MSR 20-15 A W Multi-Service Router	0235A393
Voice Processors†	
3Com Multi-Service Router 32-Channel Voice Processor Module	0231A63L
3Com Multi-Service Router 24-Channel Voice Processor Module	0231A63M
3Com Multi-Service Router 16-Channel Voice Processor Module	0231A63N
3Com Multi-Service Router 8-Channel Voice Processor Module	0231A63P
LAN Smart Interface Card (SIC) Modules	
3Com Router 1-Port 10/100 SIC	0231A53T
3Com Router 1-Port 10/100/1000 SIC	0231A61M
3Com Router 4-Port 10/100 SIC	0231A61N
LAN Double-width Smart Interface Card (SIC) Modules	
3Com Router 9-Port 10/100 DSIC	0231A61P
WAN Smart Interface Card (SIC) Modules	
3Com Router 1-Port Analog Modem SIC	0231A49M
3Com Router 1-Port ADSL2+ SIC	0231A50Y
3Com Router 1-Port Fractional T1 SIC	0231A52S

PRODUCT DESCRIPTION	3COM SKU
3Com Router 1-Port Fractional E1 SIC	0231A53X
3Com Router 1-Port Enhanced Serial SIC	0231A56N
3Com Router 2-Port FX0 SIC	0231A56P
3Com Router 1-Port FX0 SIC	0231A56Q
3Com Router 2-Port FXS SIC	0231A56R
3Com Router 1-Port FXS SIC	0231A56S
3Com Router 1-Port ISDN-U SIC	0231A61A
3Com Router 1-Port ISDN-S/T SIC	0231A61H
3Com Router 1-Port E1 Voice SIC†	0231A61Q
3Com Router 1-Port T1 Voice SIC†	0231A61R

Cables

3Com Rack Mount for MSR 20-1X Router	2150A026
3Com Router Auxiliary Cable	04021299
3Com Router E1 RJ45 Cable-3m	04026104
3Com Router E1 BNC Cable - 20m	04040148
3Com Router E1 RJ45 Cable - 20m	04040150
3Com Router T1 Cable	04041054
3Com Router V.24 DTE Cable-Enhanced	04043589
3Com Router V.24 DCE Cable-Enhanced	04043590
3Com Router V.35 DTE Cable-Enhanced	04043591
3Com Router V.35 DCE Cable-Enhanced	04043592
3Com Router X.21 DTE Cable-Enhanced	04043593
3Com Router X.21 DCE Cable-Enhanced	04043594
3Com Router T1 Voice Cable	14080099
3Com Router E1 75-120 Ohm Conversion Cable	04026813

† For use in MSR 20-12 and 20-15 models only.

Need more flexibility?

3Com MSR 20 Series Multi-Service Routers provide branch offices a secure enterprise-class connection over Ethernet or other WAN access. Its modular design delivers more expansion capabilities to existing networks with a full portfolio of WAN, LAN and voice interfaces. Advanced, embedded security functions with multiple hardware encryption options are also offered.

Visit www.3com.com for more information about 3Com solutions.

3Com Corporation, Corporate Headquarters, 350 Campus Drive, Marlborough, MA 01752-3064
3Com is publicly traded on NASDAQ under the symbol COMS.

Copyright © 2009 3Com Corporation. All rights reserved. 3Com and the 3Com logo are registered trademarks of 3Com Corporation in various countries worldwide. All other company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, 3Com does not accept liability for any errors or mistakes which may arise. All specifications are subject to change without notice.

401115-001 01/09

